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## ABSTRACT

The Center for Instructional Research and Curriculum Evaluation (CIRCE) was commissioned by the Chicago (Illinois) Teachers Academy for Mathematics and Science to conduct an internal evaluation of their programs. Academy managers wanted documentation of Academy efforts in the schools that they served. The CIRCE team left it to other evaluation teams to measure impact through standardized testing, the use of preordinate templates, and the analysis of large-scale distribution data, concentrating on a responsive evaluation plan with comprehensive, even personalistic, observation of Academy impact in unique situations. Qualitative observations, interviews with 20 teachers and 20 principals at the 42 schools the Academy serves, and document review were used to explore key issues of teacher staff development and school improvement. The findings of this interpretive study show the Academy to have been providing carefully selected schools with good quality content and pedagogical assistance. The burden on teachers, however, in terms of time and effort, even of well-received assistance programs is detailed. The Academy contribution was significant and valued by the communities served. Two handouts supplement the discussion.  
(Author/SLD)

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Evaluation Studies of the Chicago Teachers Academy:  
Methods and Findings  
of the CIRCE  
Internal Evaluation Study

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Running head: CIRCE INTERNAL EVALUATION

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Paper Presented at the Annual Meeting of the  
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### Abstract

The Center for Instructional Research and Curriculum Evaluation (CIRCE) was commissioned by the Teachers Academy for Mathematics and Science to conduct an internal evaluation of their programs. Academy managers wanted documentation of Academy effects in the schools that they served. The CIRCE team left to NCISE and other evaluation teams the measuring of impact with standardized testing, use of preordinate templates and analysis of large scale distribution data; instead focusing on a responsive evaluation plan with comprehensive, even personalistic, observation of Academy impact in unique situations. Qualitative observations, interviews, and document review were used to explore key issues of teacher staff development and school improvement. The findings of this interpretive study show the Academy to have been providing carefully selected schools with good quality content and pedagogical assistance. The burden on teachers of well-received assistance programs was detailed. The Academy contribution was significant and valued by the communities served.

In the summer of 1993, the Teachers Academy contracted CIRCE to conduct a year-long evaluative review of operations in an effort to interpret the quality of staff development and school improvement offerings. Our plan was heavy on process and issues, weak on distributions of outcomes, because we were skeptical about the validity of standardized instruments for capturing the effectiveness of Academy work. But, through intense scrutiny of that work in situation after situation, anticipated we would be able to interpret much about Academy impact and quality. The evaluation was different from many because it favored issues as conceptual structure rather than goals and promises of the organization--with most issues having less a product orientation, more one of process. Our foreshadowing questions are shown on the first handout sheet:

## Handout #1

**Descriptive**

- How does the Academy interact with the leadership of the Chicago schools and other parties across the city in order to effect a renewal of administration, teaching, and learning?
- What is the nature of Academy follow-up activity and what more is needed? Is CANAL part of the picture? What other staff development initiatives are underway?
- How has the loss of many senior teachers and principals, partly through "Five plus Five" retirement, changed the picture of staff development? How has the Academy responded?
- How do the NCTM *Standards* fit into re-development of math teaching at participating schools?

**Causal**

- How has teacher knowledge, pedagogy, and belief been affected by participation in Academy activities?

**Evaluative**

- How do the strategies and procedures for Academy delivery of service meet the needs of teachers?
- What are the advantages and disadvantages of MathTools and Teaching of Integrated Math and Science (TIMS) for staff development?
- Do present student achievement testing and assessment complement or deflect from Academy efforts?

In the style of responsive evaluation, these carefully-tailored descriptive, causal, and evaluative questions served to organize our data collection. But they were expected to be refined further as activities provided us with a firm sense of the work of the Academy--new issues might emerge and priorities would certainly change. By mid-study, the issue questions had become those listed on the top of the second handout:

#### Handout #2--Top

##### **Descriptive/Interpretive**

- Were Academy activities for participating teachers consistent with state-of-the-art pedagogical emphases on experiential learning and local school decision-making?
- Was the District emphasis on standardized achievement testing consistent with Academy emphasis on TIMS and MathTools?
- Was there integration of mathematics and science in the participating schools?
- In math instruction in participating schools, did we find more hands-on experiences, cooperative learning, problem-conceptualizing?
- How did the Academy, Chicago Public Schools, universities and others resolve differences about staff development and school improvement?
- Were there problems for a school working with several assistance groups at the same time?
- What position did the Academy take on Local School Councils assuming greater responsibility for teacher selection and retention?
- Was the Academy a key component in city and state educational initiatives?
- What was the nature of Academy leadership activity and contribution to policy setting in Chicago school reform?

##### **Causal**

- Did emphasis on problem-solving and experiential learning make classrooms appear to lack seriousness of purpose and irritate people who want strong discipline in the schools?

##### **Evaluative**

- Were MathTools and TIMS too abstract for teachers and students at participating schools?
- Were the schools and teachers most needing help the ones participating?
- Was the Academy working to diminish professional mores that keep teachers from acknowledging weaknesses and trying to collectively to remediate poor teaching?
- Did the Academy get good support from principals of participating schools?
- How well did Academy teaching reform strategy deal with teacher turnover?

It should be seen that the resulting data gathering aimed less at inventorying accomplishment than at illustrating instances of good and poor service delivered. Our report is carried by our interpretations, drawn partly from our experience and points of view. In some instances, to some people, they appear impressionistic--they are, but if we have done the work well, they are thoroughly worked impressions drawn upon numerous perspectives from both inside and outside the evaluation team. It is the intent of qualitative research to make assertions rooted in prior comprehension as well as data.

**Methods.** The final report was due August 15, eight months ago, following eight months of observation. We had designed it to include case studies of three "implementation phase" elementary schools, selected mainly in terms of our opportunity to learn about staff development and the use of MathTools and TIMS in context. Each case school got a minimum of ten days on site, with burden to the schools held in check. At the Academy's 42 schools we interviewed 20 teachers and 20 principals, randomly selected, with an emphasis on their perceptions of Academy impact, using standardized and open-ended probe questions. And we did a document review of all participant School Improvement Plans (SIPs) looking for changes over time reflecting Academy influence. Within two months, when it became apparent that we could not understand enough of what was happening without extensive review of Academy staff development activities and allied work of its new School Improvement Unit, we negotiated with Academy management to extend the scope of our work in those directions, and subsequently ran into the NCISE evaluation team more frequently.

**General Findings.** We found that the Teachers Academy for Mathematics and Science had made major contributions to the teaching performance of teachers in participating elementary schools in the public school system of Chicago. According to our observations, staff members at the Academy had developed a program of workshop experiences which demonstrated teaching methods appropriate for a sometimes brutal, changing society with a large proportion of its people greatly in need of custodial care. Participants finishing a series of workshops knew quite a bit more about what teaching should be. Educational goals had been proclaimed by the State of Illinois and several professional organizations. How to attain these fine goals remained a conjecture for this population. To lay the beginnings of a pathway to those goals, the Academy drew from numerous state-of-the-art curriculum developments to create a sound teacher development program of its own.

We interpreted the Academy's path as conceptually sound and practical. In schoolrooms of Academy participating teachers, there appeared to be a small gradual change in the role of the student, a role consistent with the problem-solving, hands-on, constructivist pedagogy of leading science and mathematics educators. Student talk was becoming increasingly sophisticated, particularly in mathematics. Students were able to describe the tasks they faced, to recognize situations in which there was too little information given, to discuss inappropriate protocols followed in getting wrong answers and the ways that different students used different protocols, to recognize patterns of problems as similar despite different contexts, e.g., science and language arts. These students were able to take both an external and internal view of problem solving.

The normal road to betterment--that adopted by many change experts--is a corrective strategy termed "rational restructuring." Goal-setting, prioritizing, planning, setting milestones, evaluation, maximizing formalization and explication are all common components of a rational management system. The Academy didn't place great reliance on formal collection of management information. This tendency proved bothersome to the CIRCE team, exasperating to the NCISE team. Yet, there was reason to doubt that the Academy would perform its staff development and school improvement responsibilities better if it tried to become more rational in its operations. We viewed its style to be intuitive, operating reflexively from personal experience--particularly with sensitivity to the cultural and political contexts of city and school activities. To say that a style is intuitive is not to say it is faulty. The style of many outstanding political and business leaders, athletes, and scientists is largely intuitive. Intuitive management can be good or bad, just as rational management can be good or bad. Bureaucratic management is often ineffective because it is too rational, fixed upon rules and justifications, too little on personal understanding and common sense. Matters at the Academy were more talked about than written down, remembered more than filed. This organizational style allowed the Academy to adapt to uniqueness in schools and fast changing needs, but perhaps less able to unite on a common platform of purpose and operation. This intuitive style is generally common in schools and certainly pervasive throughout the Chicago public school system. Thus, the Teachers Academy was operating within a framework that was consistent with the surrounding components--if they had relied heavily on formalisms, the Academy's ability to articulate with other agencies could have been hobbled.



**The Particulars.** Each school in Chicago sees itself as a special case with special obstacles, as it should. Our three case study schools were no different; each had its unique story to tell. Each story had common elements as well, but we chose not to compare them. All three case study schools were participating in multiple programs for enriching education, some of those programs offered staff development for teachers. But for most teachers the Academy was the primary external influence.

Key successful features of the Academy program were experiential training of teachers, provision of classroom materials that teachers knew how to use as a result of their training, and extended classroom support and follow-up by Academy personnel. One first grade teacher, Lisa Smith, spoke for many as she described her experience:

At the workshops, they gave us the materials and the activities and let us experiment ourselves with the stuff, just like the kids would. There wasn't much talk about cooperative learning in the workshops, but we worked in groups at stations and that causes cooperative learning almost automatically. They probably had it in mind. We talked and shared answers. The instructors didn't say "Don't do that." One good activity was on Area, where you take square inch tiles and [measure an irregular] space. Kids like that activity. We drew dinosaurs outside and measured them with meter sticks. We did it on a day when Jeannie Hall from [the Academy] was there. She would always come in the morning and ask what kind of help I would need. I really miss her. If Jeannie hadn't come, maybe the kids wouldn't have gotten the full idea of my knowledge. I might have tried a lot of the activities, but she added enrichment. She asked the kids questions I wouldn't have thought of. She was more scientific. Now I can do more of what

she did. I had the chance to observe her and learn from her successes and her failures. Not just that I do exactly what she did. I learned from observations and experience more than from her telling me things. The school-wide activities, like the project on estimating and the one on height and arm length, brought us together.

Despite appreciation for the Academy workshops, being out of the classroom was an often noted concern from participating teachers. As one teacher stated, "I'm a noted crab. Even though I'm not the children's favorite person, they would ask me not to go to the Academy workshops because they hated having a sub that often." Stability in the classroom was fragile and hard-won, something that teachers were cautious to disrupt with excursions to Academy workshops.

In addition to Academy endeavors, other assistance programs called for teacher attentions. One in-school facilitator commented on the number of help programs working within her school. "Such a burden. Each program needs committees, and a teacher in charge of the effort here, and hospitality there. Each comes with a gift, but each extracts a price, such as workshops, liaison duties,..." CIRCE evaluators recognized that the schools could be better, that many were trying to lend a helping hand. The load these schools could bear was not adequately being assessed by the Academy or other reform groups within Chicago. They were not helping school people decide, given the resources available, what responsibilities to diminish, what were attainable goals and standards.

In the end it was not the issue questions on your handout sheets, but the issue topics listed last there that structured the CIRCE evaluation report.

## Handout #2--Bottom

- The burden on teachers of providing them assistance.
- Lack of agreement on goals for mathematics and science.
- Misdirection of strategic planning.
- The insuitability of science teaching packages.

We worked hard to have a strongly interpretive character in the CIRCE report, without direct attention to immediate decision-making, without recommendations. In the field, we looked especially for the unexpected event, the telling moment, within our issue framework. We looked for others, triangulated. Sometimes only a few instances led directly to final report assertions. To find meaning and value, aggregation was not as important as understanding in context. We started with good questions and dug deeply into program activity. What we provided to the Academy was an admiring but problem beset portrayal, something of a persuasion to others that Academy operations were reasonably on target, but falling short of hope and expectations.

## Handout #1

### *Foreshadowing Questions*

#### **Descriptive**

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#### **Causal**

- How has teacher knowledge, pedagogy, and belief been affected by participation in Academy activities?

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- What are the advantages and disadvantages of MathTools and Teaching of Integrated Math and Science (TIMS) for staff development?
- Do present student achievement testing and assessment complement or deflect from Academy efforts?

## Handout #2

### *Evaluation Issue Questions*

#### **Descriptive/Interpretive**

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- Did the Academy get good support from principals of participating schools?
- How well did Academy teaching reform strategy deal with teacher turnover?

### *Evaluation Report Topics/Issues*

- The burden on teachers of providing them assistance.
- Lack of agreement on goals for mathematics and science.
- Misdirection of strategic planning.
- The insuitability of science teaching packages.